HEALTH AND SAFETY PLAN (HASP)

Introduction

This plan is prepared in accordance with OSHA specification (29CFR PART 1910) and includes the following components:

- Identification and qualifications of the Safety Professional and the Site Safety Representative
- Description of site
- Description of site operations during investigation phase
- An Emergency Action Plan
- Known hazards on site
- Personal Protective Equipment (PPE) criteria and Requirements
- Job Hazard Analysis (JHA) for major tasks
- Potentially harmful animals and plants
- A Heat Stress Prevention Plan
- Location of the first aid kits and emergency equipment

Safety Professional and Site Safety Representative (SSR)

Mr. Dave Williams, CSP, IH, MAC is designated as the safety professional for the project. Refer to Appendix A for Mr. Williams qualifications. Mr. Williams will provide the following services for the project while work is performed at the West Fertilizer Co. work sites:

- Prepare, stamp and approve the HASP
- Provide and conduct daily safety tool box meetings
- Perform gas monitoring while work is being performed at the West Fertilizer site if sampling is stopped by Texas Commission on Environmental Quality (TCEQ)
- Confirm that proper procedures are being followed while working in and around the site
- Perform weekly safety audit
- Mr. Dave Williams of Lauderdale Environmental Engineering, will prepare a monthly safety report.

Mr. Chuck Keith and Matt Wilber will be Crane Engineering site representatives. Mr. Keith and Mr. Wilber have the responsibility and authority to implement and enforce the health and safety requirements for work performed on the site.

The SSR will be present on a full time basis during all construction operations and has the authority to cease operations when the HASP in not being followed or implemented.

Duties for the SSR include, but are not limited to, the following:

- Implementation and enforcement of this HASP.
- Conduct and document required safety inspections.

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- Monitor the work area environment for health and safety hazards.
- Provide assistance and direction as to the level of protection necessary for the work activities.
- Assist in the preparation of JHA for identified work activities.
- Conduct weekly site safety inspections to identify any potential hazards and implement additional measures as needed to mitigate the potential hazard.
- Perform or oversee performance of daily safety tool box / training meetings.

Description of the Site

Following is a description of the site:

- West Fertilizer Co. in West, TX, is a fertilizer mixing and storage facility. The TIER TWO report for the West Fertilizer company from the Texas Department of State Health Services has reported a daily maximum of following chemicals and amounts, below. MSDS for all known chemicals and products can be found in appendix's E and D.
- Reported chemicals, products and some amounts on site has been reported by the TIER TWO report and ATF as the following:
    - ammonium nitrate--270 tons
    - Anhydrous ammonia ---110,000 pounds
    - Granzonnext--540 pounds
    - Reclaim--60 pounds
    - Remedy Ultra---192 pounds
    - Surmount---29.75 pounds
    - Yuma--- 400 pounds
    - Di-ammonium phosphate
    - Potassium Chloride
    - Ammonium Sulfate
    - Potassium Magnesium sulfate
    - Zink sulfate
    - Calcium carbonate
- It should be noted that this list consists only of known chemicals and products that are potentially on site. Additional unknown health hazards could be present.

Description of Site Operations/scope of work

- Allow investigators and interested parties access to the West Fertilizer Co. in West, TX as needed after the explosion at the plant site. Crane Engineering will coordinate site security, air monitoring (for oxygen, lower explosion limit, carbon monoxide, VOC's, and ammonia), general

site safety, list of minimal PPE required to access the site, MSDS sheets for known chemicals and shade for all visitors.

Emergency Action Plan

In case of emergency, call 9-1-1. No medical assistance is onsite. Maps are attached in Appendix C. Emergency route:

1. Head north on **Jerry Mashek Dr. toward Grady Calvery Dr**.
2. Slight left onto **Grady Calvery Dr**.
3. Turn right onto **N Interstate 35 frontage Rd/S I H 35.**
4. Take the ramp on the left onto **I-35N.**
5. Take exit **368A toward Hillsboro.**
6. Merge onto **S I. H. 35.**
7. Turn left onto **TX-171 N/TX-22 W.**
8. Turn right onto **Coke Ave.**
9. Turn left onto **E Elm St.**
10. Take the **1st right onto Jane Ln**.

Refer to Appendix C for the site specific Emergency Action Plan.

Inspections and Training

- Site safety inspections will be conducted prior to each onsite inspection. A site safety inspection checklist is included in Appendix H.
- All visitors will have access to the HASP and be required to sign access agreement, provided by Crane Engineering, in order to walk through site. General site hazards will be discussed prior to each site visit.

Potential Chemical Hazards

- Lauderdale Environmental Engineering has included a list of potential compounds known to be on site (appendix D) also including the material safety data sheets (MSDS) for chemicals we have identified or listed on the West Fertilizer Co. site (appendix E). In case of spill, inform Crane Engineering representative as soon as possible.

Hazards and known potential health concerns during site inspection

Lauderdale Environmental Engineering has identified the following hazards for this site:

- Potential for hazardous including caustic, reactive, volatile, oxidizing, and / or toxic gases, liquids, and solid materials.
- Hoisting material such as scrap metal and debris.
- Machine guarding of power tools used on the project.
- Excavations will be inspected by Lauderdale Environmental Engineering as required by OSHA to ensure they are safe for work to be performed.

- Potential Electrical hazards from generators, equipment and power supply to the plant site.
- Debris from the explosion and West Fertilizer site create the possibility of explosions, sharp/pointed objects, slips, trips and falls.
- Falls into holes located throughout the site. Some parts of the site will be designated hazardous areas and entry into these areas will not be permitted without consent and inspection by Crane Engineering and Lauderdale Environmental Engineering.
- Fire due to flammable or explosive gases that are encountered or from combustible material igniting.
- Pinch points and crushing hazards during pipe installation and when working around heavy equipment.
- Heat related illness due to work in high temperature work areas or in areas with little to no circulation.
- Vehicle traffic and heavy machinery could be present
- Severe weather

Personal Protective Equipment (PPE) Criteria and Requirements

At a minimum, all visitors and employees at the project will be required to wear the following PPE:

- Hard hat
- Safety glasses
- Safety toe leather boots

Additional PPE will be required depending on the type of process being performed. This may include, but not be limited to:

- Half-face or full-face respirator using GME and P-100 combination filters
- High visibility reflective safety vest
- Confined space non-entry retrieval equipment
- Self rescue breathing devices
- Face shields
- Goggles
- Hearing protection
- Chaps
- Coveralls
- Respiratory protection equipment
- Fall protection equipment

It should be noted that all visitors, inspectors and interested parties are responsible for providing their own PPE. All visitors, inspectors or interested parties are responsible for compliance with the HASP

and to determine if they are healthy enough and have adequate training to use PPE. Refer to OSHA standard 1910 Subpart I for additional information regarding PPE and the requirements for proper work clothing.

Lauderdale Environmental Engineering will implement engineering controls and administrative controls whenever possible to mitigate respiratory hazards. In the event that a respiratory hazard cannot be controlled with either engineering controls or administrative controls, a respiratory protection program will be developed and implemented.

Gas monitoring instrument

- 5-Gas monitor, Area Rae equipped with VOC, O_2, LEL, Ammonia, and CO sensors. Area air samples will be monitored continuous, starting 1-hour prior to any personnel entering the West Fertilizer Co. site. All instruments will be calibrated as required by the manufacturer and bump tested daily. Monitoring records will be noted and kept on site in the Crane Engineering office. Instrument description and gas monitoring sheet can be found in appendix F.

Contaminant Action level		
Contaminant	**level limits**	**Action**
Carbon Monoxide	0- 35ppm	Leave area until emission/levels are controlled or reduced
Oxygen	19.5-23%	Leave area until emission/levels are controlled or reduced
LEL	0-10%	Leave area until emission/levels are controlled or reduced
VOC	0-100ppm	Leave area until emission/levels are controlled or reduced
Ammonia	0-25ppm	Leave area until emission/levels are controlled or reduced

Control measure and engineering work practices

- Engineering controls will be developed as the different phases of the project are identified. Areas which are determined to currently have significant health and safety risks will have restricted access and be identified during safety briefs. Safety briefs will be performed daily by the onsite SSR and any stop work will be determined by Crane Engineering representatives.

Site control and security

- Crane Engineering is responsible for coordination of site control and security as soon as the site is released by ATF.

Job Hazard Analysis (JHA) for Major Construction Tasks

A JHA has been prepared for the following major work activities, which are located in

Appendix G:

- Site visits include site walk-through, photography, and documentation of scene. All visitors will be required to sign in and be accompanied by a Crane Engineering representative.

Task 1: Site entry and evaluation			Work area: West Fertilizer Co.	
Jobs	potential hazards	Exposure Potential	Controls and Safe practices	PPE (Level and Details)
Site Entry	Corrosive, toxic, flamable, reactive, volitile, explosion, slip/trip/fall, noise, vehicles/traffic, structural instability, animals, insects/spiders/ect.	low	Be alert to slip, trip, and fall, pinch, caught, and striking hazards. Be alert to potential overhead hazards. LEE will conduct air monitoring and assess onsite hazards as needed.	Hardhat, steel toed work boots, safety glasses.

Task 2: Scene walk-through and documentation			Work area: West Fertilizer Co.	
Jobs	potential hazards	Exposure Potential	Controls and Safe practices	PPE (Level and Details)
Photograph, document scene, walk-through, interview	Corrosive, toxic, flamable, reactive, volitile, explosion, slip/trip/fall, noise, vehicles/traffic, structural instability, animals, insects/spiders/ect.	low	Be alert to slip, trip, and fall, pinch, caught, and striking hazards. Be alert to potential overhead hazards. LEE will conduct air monitoring and assess onsite hazards as needed.	Hardhat, steel toed work boots, safety glasses.

- The Steering committee will prepare an inspection protocol for work activities . During preparation of the inspection protocol all known potential safety hazards will be identified and incorporated. The protocol also includes a list of the equipment, tools, materials and other required items to perform the work. Site safety inspections (appendix H) will be performed daily prior to visitor entry.

Decontamination Procedure

- Personal: Dry decontamination with careful removal of potentially contaminated PPE. To minimize decontamination concerns, disposable equipment will be used as appropriate, and

personnel will observe good hygiene practices. If skin is exposed, wash thoroughly with soap and water.

- Wet decontamination with soap and water onsite, with emergency decontamination via portable water sparer or hose, if available.

Heat Related Illness Prevention Plan

Refer to Appendix J for the Heat Related Illness Prevention Plan.

Potentially Harmful Animals and Plants

The following potentially harmful animals and plants could be encountered at the job site:

- The area may have wild dogs, poisonous snakes, bees, and poisonous insects and plants.
- There is the potential for exposure to Hantavirus from rodents.
- Poison oak and poison ivy is amongst the vegetation types in the area.

Location of First Aid Kits and Emergency Equipment

- First aid kits will be located at the project field office.
- Emergency equipment will be located at the project office or at the location where critical work activities are performed so it is readily available in case of an emergency.